

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (currently amended) Method for determining the speed of a transmission member in a hybrid electric powertrain, said powertrain including a hybrid transmission having at least one electric motor operatively coupled to said transmission member and at least one rotation sensor for operatively sensing rotation of said preselected transmission member, comprising:

providing a first signal indicative of the speed of said transmission member calculated from the output from said at least one rotation sensor;

providing a second signal indicative of the speed of said transmission member calculated from ~~the speed~~ electrical phase information of said at least one electric motor and an effective rotation ratio between the transmission member and said at least one electric motor; and,

selecting as the speed of the transmission member said second signal when predetermined conditions indicate that the first signal is unreliable.

2. (original) The method for determining the speed of a transmission member as claimed in claim 1 wherein the transmission member comprises an output member.

3. (original) The method for determining the speed of a transmission member as claimed in claim 1 wherein the predetermined conditions which indicate that the first signal is unreliable include a) speed of the transmission member below a predetermined threshold, and b) loss of sensor output.

4. (canceled)

5. (currently amended) Method for determining the speed of a transmission member in a hybrid electric transmission including at least one electric motor, comprising: providing as the speed of the transmission member a first speed signal calculated from at least one output from a redundant pair of rotation sensors operatively sensing rotation of the output member when either ~~speed~~ rotation sensor is providing an in-range output; and, providing as the speed of the transmission member a second speed signal calculated from electrical phase information of said at least one electric motor ~~speed~~ and an effective rotation ratio between the preselected transmission member and said at least one electric motor when neither ~~speed~~ rotation sensor is providing an in-range output.

6. (original) The method as claimed in claim 5 wherein said rotation sensors comprise variable reluctance sensors, further comprising: providing as the speed of the transmission member the second speed signal when output member speed is below a low-speed threshold.

7. (currently amended) Method for determining the speed of a transmission member in a hybrid electric powertrain, said powertrain including a hybrid transmission having at least one electric motor operatively coupled to said transmission member and at least one rotation sensor for operatively sensing rotation of said transmission member, comprising: providing a first signal indicative of the speed of said transmission member calculated from the output from said at least one rotation sensor; providing a second signal indicative of the speed of said transmission member calculated from electrical phase information ~~the speed of~~ said at least one electric motor and an effective gear ratio between the transmission member and said at least one electric motor; selecting as the speed of the transmission member said first signal when a first set of conditions are met; and selecting as the speed of the transmission member said second signal when a second set of conditions are met.

8. (currently amended) Apparatus for determining speed of a transmission member in a hybrid electric powertrain, said transmission including at least one electric motor operatively coupled to said transmission member, comprising:
a sensor adapted to sense rotation of the transmission member and provide ~~an~~ a sensor output signal therefrom;
a motor controller adapted to provide an electric motor speed signal from electrical phase information of said at least one electric motor therefrom; and,
a computer based transmission controller having a set of program instructions adapted to to:
calculate a first speed signal from the sensor output ~~signal~~ signal; ~~and a~~
calculate a second speed signal from the electric motor speed signal and an effective
rotation ratio between said at least one electric motor and the transmission member,
member; and further adapted to
diagnose faults in the first and second speed signals; and
select as the speed of the transmission member the one of the first and second speed signals based on diagnosed faults.

9. (new) The apparatus of claim 8 wherein the sensor comprises a variable reluctance sensor.

10. (new) The method of claim 8 wherein the program instructions adapted to diagnose faults further includes program instructions adapted to identify whether there exists an in-range fault or a dropped or lost sensor output signal for the first speed signal.

11. (new) The method of claim 8 wherein the program instructions adapted to diagnose faults further includes program instructions adapted to identify whether there exists an in-range fault or a dropped or lost sensor output signal for the second speed signal.